

# **RODENT**

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## *Newsletter*

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Vol. : 23 (1 - 2)

1999



भारत  
ICAR

**ALL INDIA COORDINATED  
RESEARCH PROJECT ON  
RODENT CONTROL**

**Central Arid Zone Research Institute  
Jodhpur - 342 003, India**

# **RODENT**

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WITH COMPLIMENTS

AICRP on Rodent Control

Central Arid Zone Research Institute

Jodhpur - 342 003, India

## Endemic species of rodents in India

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As per the available literature, there are 393 species of mammals found in India. Out of them, 40 species are endemic to the country i.e. confined to the political boundary of India only. Among 40 endemic species of mammals, 15 are rodents. The present note enlists the endemic species of Indian rodents along with their distribution and intraspecific variation. We have made certain changes in the list of endemic rodents which were included in an earlier note (*Rodent Newsletter 1997 21 (3&4) : 8-10*). *Alticola montosa* and *Mus phillipsi* are also found in Pakistan and Nepal respectively. Hence, these two species have been excluded from the list. *Alticola albicauda*, *Alticola roylei*, *Mus platythrix*, *Rattus burrus* have been added to this list of endemic rodents of India.

### Family : Sciuridae

1. *Funambulus tristriatus* (Waterhouse, 1837)  
Distribution : Western Ghats north to Bombay.  
Intraspecific variation : Represented by three subspecies.
2. *Ratufa indica* (Erxleben, 1977)  
Distribution : Peninsula of India.  
Intraspecific variation : Represented by four subspecies.
3. *Biswamoypterus biswasi* Saha, 1981  
Distribution : Known only from Namdhapa, Arunachal Pradesh.

### Family : Muridae

4. *Alticola albicauda* (True, 1894)  
Distribution : Kashmir and Northwest India.
5. *Alticola roylei* Gray, 1842.  
distribution : Record only from N Kumaon and N. Himachal Pradesh (Lahul region) of N. India.
6. *Cremnomys cutchicus* Wroughton, 1912  
Distribution : Northwest in Uttar Pradesh, Gujarat, Rajasthan, east to Bihar and Orissa, South to Karnataka.

Intraspecific variation : Represented by four subspecies. The characters of different subspecies are overlapping.

7. *Cremnomys elvira* (Ellerman, 1946)  
Distribution known only from Kurumbapatty, Salem district, Tamil Nadu.
8. *Millardia hondana* Mishra and Dhanda, 1975  
Distribution : Singharh Plateau, Pune, Maharashtra.
9. *Mus famulus* Bonhote, 1898  
Distribution : Around 1500m in Nilgiri Hills, Annamalai Hills, Palni Hills of South India.
10. *Mus platythrix* Bennett, 1832  
Distribution : Bihar, Peninsular India, Rajasthan.
11. *Rattus burrus* (Miller, 1902)  
Distribution : Islands of Trinkat, Little Nicobar and Great Nicobar in the Nicobar Archipelago.  
Intraspecific variation : Needs to be tested by a systematic revision.
12. *Rattus palmarum* (Zelevor, 1869)  
Distribution : Nicobar Islands.
13. *Rattus ranjinae* Agarwal and Ghosal, 1969  
Distribution : Trivandrum and Trichur, Kerala.
14. *Rattus stoicus* (Miller, 1902)  
Distribution : South and Little Andamans, Henry Lawrence Island.
15. *Platacanthomys lasiurus* Blyth, 1859  
Distribution : Forested tracts of Western Ghats, below 1000 M.  
Out of 102 species of rodents in India, 15 are endemic. Among them 12 are monotypic i.e. without any variation.

## Incidence of rodent pests during bamboo flowering in Arunachal Pradesh

S. BHATTACHARJEE, A. BHATTACHARJEE AND SONE LAL  
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Bamboo constitute a sizeable portion of the vegetation on the hilly slopes in Arunachal Pradesh. The flowering of bamboo in the State is considered as ominous sign by the local tribals. It is supposed to be a year

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of famine which coincides with the sudden increase in rodent population. During the year 1990-91, 1991- 92 two species of bamboo locally known as 'Aah' (*Bambusa khasiana*) and 'Towak' (*Dendracalamus hemiltoni*) started flowering in Seppa region of East Kameng district and Daporige of Upper Subansiri district. These species initiated flowering in the Along area of West Siang district during 1992-93 and 1993-94. In Along the above bamboo species were commonly known as 'Tabun' (*B. khasiana*) and 'Enl' (*D. hemiltoni*). During the above period (1990-94) increase in rodent menace were reported by the farmers of adjacent bamboo flowering areas, resulting in a destruction of standing field crops. In all the three study areas i.e. Seppa, Daporige and Along, *Mus musculus* was the dominant species in houses (61.4%) followed by *Rattus rattus* (38.6%). In the bamboo flowering bushes, *Rattus rattus* was the dominant species followed by *R. nitidus* and *Bandicota bengalensis*, with 36.7, 35.7 and 27.6 per cent occurrence, respectively. The presence of large number of *R. rattus* also indicates the possible migration of this species from granaries of nearby villages to the bamboo bushes. In cropfields *R. nitidus* outnumbered other two species i.e. *B. bengalensis* and *R. rattus* with 43.1, 32.5 and 24.4 per cent occurrence, respectively. Interestingly the Himalayan rat, *R. nitidus* took active part in crop damage in the fields. (Table 1)

**Table 1 : Rodent species composition in different habitats in bamboo flowering areas of Arunachal Pradesh (1990-94)**

Habitats	Mm	Rr	Rn	Bb
Houses	61.4	38.6	-	-
Bamboo bushes	-	36.7	35.7	27.6
Crop fields	-	24.4	43.1	32.5

\* Mm - *Mus musculus*; Rr - *Rattus rattus*; Rn - *Rattus nitidus*; Bb - *Bandicota bengalensis*

Some observations on bamboo flowering and rodent menace in the region are briefed as under :-

> It is believed that accumulation of some hormones in rhizomes of certain species of bamboo for years together become active after an interval of 20-40 years due to some physiological and ecological condition in certain geographical areas leading to initiations of flowering.

- > Flowering was confined to only one species (*B. khasiana*) in the Seppa region of East Kameng district and in two species, *B. khasiana* and *D. hemiltoni* in Daporige region of Upper Subansiri district of Arunachal Pradesh.
- > Flowering of bamboo was visible on both the sides of Subansiri and Kameng river extending upto 1 km area.
- > In both cases, after flowering and maturation of seeds the whole bush and roots dried up.
- > As soon as the bamboo bushes dried up, the abnormal increase in rat population was noticed in the crop fields and villages. Shortage of food in the bamboo forests compell them to migrate to the nearby crop fields and adjacent granaries.
- > Availability of abundant quantity of bamboo seeds which are enriched with food value may be one of the factors for proliferation of rodent population.

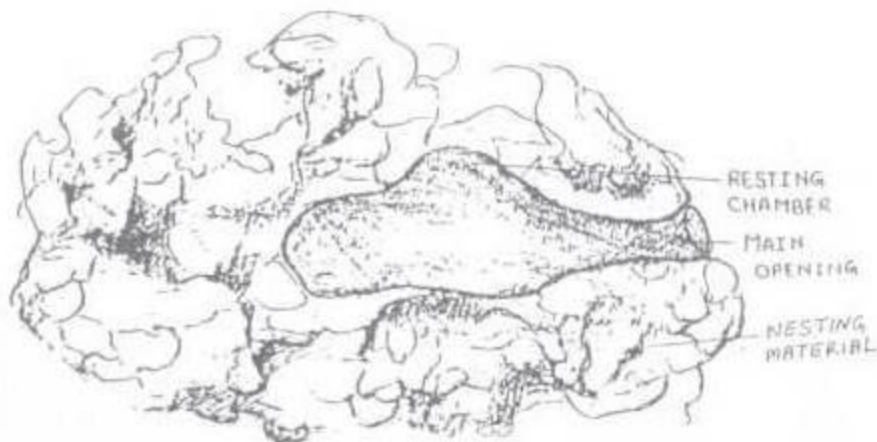
It is therefore concluded that *Mus musculus* which is known as house mice was not been observed in the bamboo bushes and crop fields, whereas other three species collected from the bamboo bushes and crop field viz. *R. rattus*, *R. nitidus* and *B. bengalensis* are probably directly associated with the bamboo flowering and subsequent crop damage.

## Nesting behaviour of Northern Palm Squirrel, *Funambulus pennanti* (Wroughton)

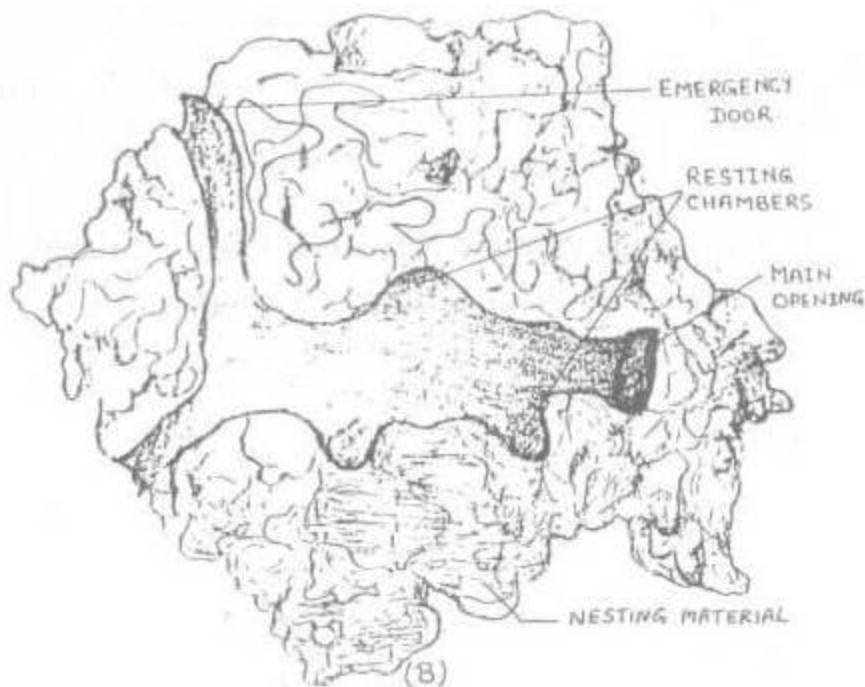
GIRISH CHOPRA AND M.K. RANA

Kurukshetra University, Kurukshetra - 136 119

Nesting behaviour of northern palm squirrel was studied in seven habitats viz. roadside plantations, urban residential premises, undisturbed plantation patch, rural farm houses, orchards, grain markets and garden in Kurukshetra (Haryana) from October, 1995 to March, 1996. The squirrels were observed to construct their nests above ground on different tree species, on electric poles, in the crevices of the wall of buildings, in the door shutters of shops/garages and in undisturbed window. However, nesting activity was recorded to be maximum on the tress in all the seven habitats surveyed for this study in Kurukshetra.



(A)



(B)

Fig 1 : (A) Small sized and (B) Large sized nest of *Funambulus pennanti*

On the basis of size and general structure, two kinds of nests of *F. pennanti* were identified in the study area (Fig. 1) out of the total 50 nests studied in different habitats, 22 (44%) were large sized and 28 (56%) were small-sized nests. However, information pertaining to general structure and diameter of only 23 nests (15 large-sized and 8 small-sized) could be recorded. The size of the nest seemed to be correlated with the number of individuals occupying it. The average diameter of large-sized nest was recorded to be  $28.45 \pm 3.12$  cm. It was found to be occupied by 2-3 squirrels. Each such large-sized nest possessed one main opening, one or two emergency openings and 2-3 resting chambers within (Fig.1). On the contrary, the average diameter of small-sized nest was  $17.28 \pm 1.54$  cm. Each such nest was found to be occupied by only one individual and had one surface opening with a single resting chamber within (Fig.1.) No hoarded material was recovered from any of the studied nests.

To construct its nests, *F. pennanti* generally utilized cotton, grass leaves, disposed clothes, dried twigs, ropes, pieces of gunny bags, rice straw and even hairy inflorescence of *Saccharum munja*. The percentage of nesting materials utilized, however, varied from nest to nest and even in different habitats as per their availability.

## Evaluation of Difethialone and Other Rodenticides in Wheat Crop

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Under the rodenticidal evaluation programme, difethialone-an advance anticoagulant was tested alongwith other available rodenticides against field rats infesting wheat crop in Kalyanpur block distt. Kanpur Nagar during 1997-98. The poison baits of rodenticides were provided in the live rodent burrows. The per cent rodent control success was worked out on the basis of live burrow count method. The rodent pest complex of the experimental site consists of *Bandicota bengalensis*, *Tatera indica* and *Millardia meltda*.

**Table 1: Bio-efficacy of rodenticides against field rats infesting wheat crop.**

Rodenticides	No of burrows treated	Per cent control success			
		3rd day	5th day	7th day	9th day
1. Difethialone (0.0025%)	38	36.8	57.8	68.4	81.5
2. Bromadiolone (0.005%)	24	33.3	58.3	66.6	83.3
3. Cholecalciferol (0.075%)	25	28.0	52.0	60.0	76.0
4. Flocoumafen (0.005%)	30	36.6	63.3	76.6	86.6
5. Zinc Phosphide (2%)	27	37.0	55.5	66.6	66.6

The data presented in the Table 1 show that flocoumafen (0.005%) gave highest 86.6 per cent control success on ninth day of treatment followed by bromadiolone 83.3%, Difethialone (81.5%), cholecalciferol (76.0%) and Zinc phosphide (66.6%). Thus, it may be concluded that difethialone (0.0025%) be recommended for the effective control of field rats (*B. bengalensis*, *T. indica* and *M. meltada*) infesting wheat crop.

Contributions for inclusion in the Newsletter may please be forwarded alongwith 1 - 2 good black and white photographs to :

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